

## I CLAIM:

1. A wood lathe comprising:

a bed;

a headstock mounted on said bed and having a  
5 headstock housing;

a motor mounted securely in said headstock  
housing and having two axial ends and an annular outer  
area that extends between said axial ends, said motor  
including a driving shaft with opposite first and  
10 second output ends that project outwardly and axially  
from said axial ends of said motor, respectively;

a spindle rotatably journaled to said headstock  
housing and parallel to said driving shaft;

a first transmission unit interconnecting said  
15 first output end of said driving shaft and said  
spindle so as to permit co-rotation of said spindle  
with said driving shaft;

a cooling fan disposed in said headstock housing  
adjacent to said motor for cooling said motor, said  
20 cooling fan including a driven shaft that is rotatably  
journaled to said headstock housing and that is  
parallel to said driving shaft, a plurality of blades  
projecting outwardly from said driven shaft, and a  
fan casing coaxially surrounding said driven shaft  
25 and said blades, said fan casing having an axially  
extending peripheral wall that is formed with a first  
air outlet which is disposed adjacent to and which

opens toward said annular outer area of said motor in a transverse direction relative to a rotation axis of said driven shaft so as to direct airflow toward said annular outer area of said motor upon rotation  
5 of said driven shaft; and

a second transmission unit interconnecting said second output end of said driving shaft and said driven shaft so as to permit co-rotation of said driven shaft with said driving shaft.

10 2. The wood lathe of Claim 1, wherein said annular outer area of said motor has top and bottom sides, said first air outlet being disposed above and confronting said top side of said annular outer area of said motor so as to direct airflow thereto upon  
15 rotation of said driven shaft.

3. The wood lathe of Claim 2, wherein said peripheral wall of said fan casing is annular in shape and is further formed with a second air outlet that is disposed above and angularly spaced apart from said  
20 first air outlet, and that opens downwardly, said wood lathe further comprising an airflow guide that includes a curved plate secured to said peripheral wall, extending downwardly and curvedly from said second air outlet, and circumferentially surrounding  
25 one side of said annular outer area of said motor between said top side of said annular outer area and said bottom side of said annular outer area.

4. The wood lathe of Claim 3, wherein said fan casing has an axial end formed with an air inlet, said cooling fan further including a tube that extends outwardly and axially from said air inlet through said headstock housing so as to permit introducing of fresh air into said headstock housing upon rotation of said driven shaft.

5. The wood lathe of Claim 4, wherein said headstock housing includes a pair of rectangular first and second mounting walls that respectively confront said axial ends of said motor, said first mounting wall being formed with a pair of diagonally disposed threaded holes, said wood lathe further comprising a motor-fastening unit that includes a pair of rectangular first and second fastening plates respectively attached to said axial ends of said motor and disposed between and respectively confronting said first and second mounting walls, a pair of first screw rods, and a pair of second screw rods, each of said first screw rods having an enlarged head and a shank that is formed with an outer thread and an inner thread and that has an abutting end opposite to said enlarged head, each of said first screw rods extending through said first mounting wall and threadedly engaging a respective one of said threaded holes in said first mounting wall in such a manner that said enlarged head is disposed at an outer side of said

first mounting wall and that said abutting end is disposed between said first mounting wall and said first fastening plate and adjacent to said first fastening plate, each of said second screw rods having an enlarged head and a shank that has a tail formed with an outer thread, each of said second screw rods extending through said first and second fastening plates in such a manner that said enlarged head thereof is disposed at an outer side of said second fastening plate and that said tail thereof extends through said first fastening plate to threadedly engage said inner thread of said shank of a respective one of said first screw rods, thereby ensuring abutment of said enlarged head of each of said first screw rods against said first mounting wall, abutment of said abutting end of said shank of each of said first screw rods against said first fastening plate, and abutment of said enlarged head of each of said second screw rods against said second fastening plate upon tightening of each of said first screw rods relative to the respective one of said second screw rods.